



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

October 7, 2011

REDACTED

Wells Center
Wells Center
8.7

Dear REDACTED

EPA has received and initially reviewed the first round of indoor air and sub-slab soil gas validated data collected from the building on your property at REDACTED Woburn, MA. Our preliminary review focused only on contaminants in indoor air that may be entering your building via vapor intrusion. Our preliminary review of the first round of validated data collected in April 2011 indicates that vapor intrusion does not pose a health threat inside the building. It is important to note, however, that EPA's final review will be based on evaluation of the validated data from two rounds of indoor air sampling, one round conducted during heating conditions in April, as has already been done, and one round conducted during non-heating conditions in June 2011, as well as groundwater and sub-slab data.

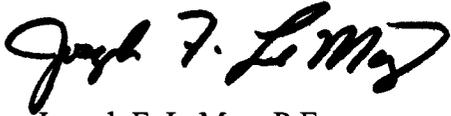
Vapor intrusion is the movement of volatile contaminants from groundwater into a structure. Our preliminary review does not consider those contaminants that may be present in indoor air from unrelated sources such as those released from cleaning products, building materials, personal care products or from the storage of solvents and fuels.

Please find attached a figure illustrating the locations where the first round of indoor air samples were collected within the building on your property in April 2011, and a table summarizing the first round of validated data collected. Please note that the following descriptions apply to the attached table: indoor air samples are denoted as "IA"; sub-slab soil gas samples are denoted as "SS"; and outdoor air samples are denoted as "OA".

EPA anticipates completing its comprehensive evaluation of both rounds of validated data and providing you with further information regarding the overall results in November 2011.

If you have any questions regarding this letter, or would like to meet and discuss the first round results, please contact me at (617) 918-1323.

Sincerely,

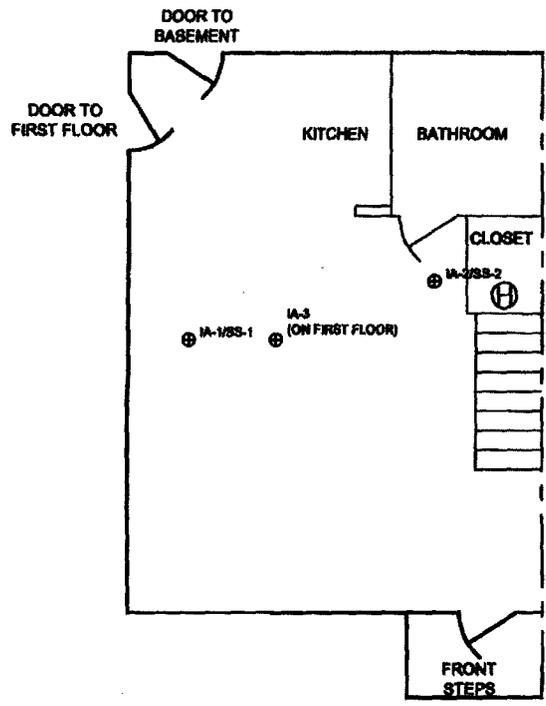
A handwritten signature in black ink that reads "Joseph F. LeMay". The signature is written in a cursive style with a large, stylized initial "J".

Joseph F. LeMay, P.E.
Office of Site Remediation and Restoration



LEGEND:

- ⊕ SAMPLING LOCATION
- ⊕ HOT WATER HEATER



NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. NOT TO SCALE.

UNFIRST CORPORATION WOBURN, MA INDOOR AIR QUALITY AND VAPOR INTRUSION ASSESSMENT: REPORT OF RESULTS	
RESIDENCE SAMPLE LOCATIONS - APRIL 2011	
	FIGURE 1



North Unit

Table 1. Residential Indoor and Ambient Air Data

Sample Name: Location: Date Collected:	Units	IA-1 Basement 4/22/2011	IA-2 Basement 4/22/2011	IA-3 1st Floor 4/22/2011	Average Detected Concentration in Indoor Air	OA-1 Outdoor 4/22/2011
1,1,1-Trichloroethane	ug/m3	0.109 U	0.109 U	0.109 U	ND	0.109 U
1,1,2-Trichloroethane	ug/m3	0.109 U	0.109 U	0.109 U	ND	0.109 U
1,1-Dichloroethane	ug/m3	0.0809 U	0.0809 U	0.0809 U	ND	0.0809 U
1,1-Dichloroethene	ug/m3	0.0792 U	0.0792 U	0.0792 U	ND	0.0792 U
1,2,4-Trimethylbenzene	ug/m3	0.314	0.344	0.403	0.354	0.0982 U
1,2-Dibromoethane	ug/m3	0.154 U	0.154 U	0.154 U	ND	0.154 U
1,2-Dichloroethane	ug/m3	0.234	0.267	0.376	0.292	0.0809 U
1,2-Dichloropropane	ug/m3	0.0924 U	0.0924 U	0.0924 U	ND	0.0924 U
1,3-Butadiene	ug/m3	0.186	0.225	0.23	0.213	0.0442 U
1,3-Dichlorobenzene	ug/m3	0.12 U	0.12 U	0.12 U	ND	0.12 U
1,4-Dichlorobenzene	ug/m3	0.12 U	0.12 U	0.12 U	ND	0.12 U
Benzene	ug/m3	0.881	0.964	1.0	0.945	0.326
Bromodichloromethane	ug/m3	0.134 U	0.134 U	0.134 U	ND	0.134 U
Bromoform	ug/m3	0.206 U	0.206 U	0.206 U	ND	0.206 U
Carbon Tetrachloride	ug/m3	0.333	0.333	0.35	0.337	0.352
Chlorobenzene	ug/m3	0.092 U	0.092 U	0.092 U	ND	0.092 U
Chloroform	ug/m3	0.244	0.254	0.25	0.251	0.0976 U
cis-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U	0.0792 U	ND	0.0792 U
Ethylbenzene	ug/m3	0.555	0.612	0.6	0.597	0.087
Isopropylbenzene	ug/m3	2.46 U	2.46 U	2.46 U	ND	2.46 U
Methylene Chloride	ug/m3	1.74 U	1.74 U	1.74 U	ND	1.74 U
Methyl tert-butyl ether	ug/m3	0.072 UJ	0.072 UJ	0.072 UJ	ND	0.072 UJ
Naphthalene	ug/m3	0.136 UJ	0.157 UJ	0.262 U	ND	0.262 U
Tetrachloroethene	ug/m3	0.366	0.366	0.29	0.341	0.136 U
Toluene	ug/m3	2.65	2.8	3	2.80	0.561
trans-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U	0.0792 U	ND	0.0792 U
trans-1,3-Dichloropropene	ug/m3	0.0907 UJ	0.0907 UJ	0.0907 UJ	ND	0.0907 UJ
Trichloroethene	ug/m3	0.107 U	0.107 U	0.107 U	ND	0.107 U
Vinyl Chloride	ug/m3	0.0511 U	0.0511 U	0.0511 U	ND	0.0511 U
Xylenes (total)	ug/m3	1.58	1.81	2	1.78	0.26 U

REDACTED

Notes:

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

ug/m3 - Micrograms per cubic meter

IA - Indoor air sample

OA - Ambient air sample

ND - Not detected

Table 2. Residential Sub-slab Soil Vapor Data
North Unit

Sample Name: Location: Date Collected:	Units	SS-1 Sub-Slab 4/22/2011	SS-2 Sub-Slab 4/22/2011	Average Detected Concentration Sub- Slab Soil Vapor
1,1,1-Trichloroethane	ug/m3	0.245	0.213	0.229
1,1,2-Trichloroethane	ug/m3	0.109 U	0.109 U	ND
1,1-Dichloroethane	ug/m3	0.0809 U	0.0809 U	ND
1,1-Dichloroethene	ug/m3	0.0792 U	0.0792 U	ND
1,2,4-Trimethylbenzene	ug/m3	0.0982 U	0.0982 U	ND
1,2-Dibromoethane	ug/m3	0.154 U	0.154 U	ND
1,2-Dichloroethane	ug/m3	0.0809 U	0.0809 U	ND
1,2-Dichloropropane	ug/m3	0.0924 U	0.0924 U	ND
1,3-Butadiene	ug/m3	0.0442 U	0.0442 U	ND
1,3-Dichlorobenzene	ug/m3	0.12 U	0.12 U	ND
1,4-Dichlorobenzene	ug/m3	0.12 U	0.12 U	ND
Benzene	ug/m3	1.32	0.223 U	1.32
Bromodichloromethane	ug/m3	0.134 U	0.134 U	ND
Bromoform	ug/m3	0.206 U	0.206 U	ND
Carbon Tetrachloride	ug/m3	0.126 U	0.126 U	ND
Chlorobenzene	ug/m3	0.092 U	0.092 U	ND
Chloroform	ug/m3	0.205	0.693	0.449
cis-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U	ND
Ethylbenzene	ug/m3	0.59	0.0868 U	0.59
Isopropylbenzene	ug/m3	2.46 U	2.46 U	ND
Methylene Chloride	ug/m3	1.74 U	1.74 U	ND
Methyl tert-butyl ether	ug/m3	0.072 UJ	0.072 UJ	ND
Naphthalene	ug/m3	0.262 U	0.262 U	ND
Tetrachloroethene	ug/m3	53.2	154	104
Toluene	ug/m3	6.4	0.188 U	6.4
trans-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U	ND
trans-1,3-Dichloropropene	ug/m3	0.0907 UJ	0.0907 UJ	ND
Trichloroethene	ug/m3	0.161	0.107 U	0.161
Vinyl Chloride	ug/m3	0.0511 U	0.0511 U	ND
Xylenes (total)	ug/m3	1.8 J	0.26 U	1.8

Notes:

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

ug/m3 - Micrograms per cubic meter

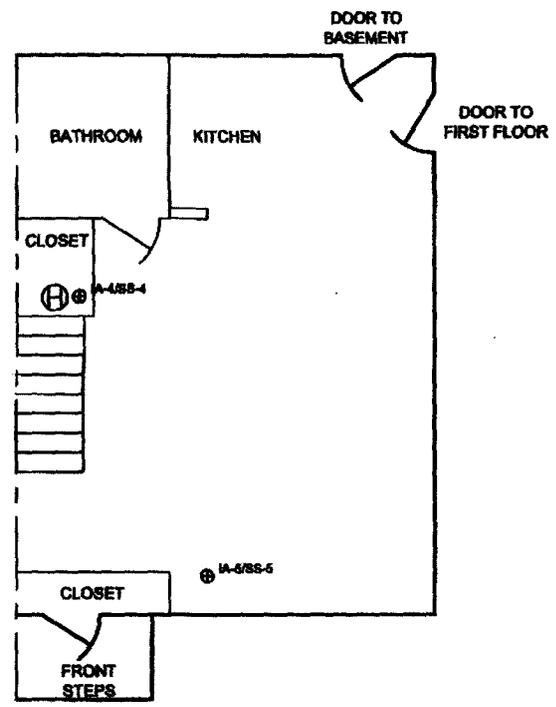
SS - Sub-slab soil vapor sample

ND - Not detected

Bold - Value given is detected concentration only, as compound was detected in one sample only.



LEGEND:
⊕ SAMPLING LOCATION
⊕ HOT WATER HEATER



NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
2. NOT TO SCALE.

UNFIRST CORPORATION WOBBURN, MA INDOOR AIR QUALITY AND VAPOR INTRUSION ASSESSMENT: REPORT OF RESULTS	
RESIDENCE SAMPLE LOCATIONS - APRIL 2011	
 ARCADIS	FIGURE 1

Table 1. Residential Indoor and Ambient Air Data

South Unit

Sample Name: Location: Date Collected:	Units	IA-4 Basement 4/22/2011	IA-5 Basement 4/22/2011	Average Detected Concentration in Indoor Air	OA-1 Outdoor 4/22/2011
1,1,1-Trichloroethane	ug/m3	0.109 U	0.109 U [0.109 U]	ND	0.109 U
1,1,2-Trichloroethane	ug/m3	0.109 U	0.109 U [0.109 U]	ND	0.109 U
1,1-Dichloroethane	ug/m3	0.0809 U	0.0809 U [0.0809 U]	ND	0.0809 U
1,1-Dichloroethene	ug/m3	0.0792 U	0.0792 U [0.0792 U]	ND	0.0792 U
1,2,4-Trimethylbenzene	ug/m3	0.201	0.167 [0.157]	0.182	0.0982 U
1,2-Dibromoethane	ug/m3	0.154 U	0.154 U [0.154 U]	ND	0.154 U
1,2-Dichloroethane	ug/m3	0.125	0.113 [0.125]	0.122	0.0809 U
1,2-Dichloropropane	ug/m3	0.0924 U	0.0924 U [0.0924 U]	ND	0.0924 U
1,3-Butadiene	ug/m3	0.148	0.115 [0.124]	0.134	0.0442 U
1,3-Dichlorobenzene	ug/m3	0.12 U	0.12 U [0.12 U]	ND	0.12 U
1,4-Dichlorobenzene	ug/m3	0.12 U	0.12 U [0.12 U]	ND	0.12 U
Benzene	ug/m3	0.485	0.46 [0.469]	0.475	0.326
Bromodichloromethane	ug/m3	0.134 U	0.134 U [0.134 U]	ND	0.134 U
Bromoform	ug/m3	0.206 U	0.206 U [0.206 U]	ND	0.206 U
Carbon Tetrachloride	ug/m3	0.358	0.339 [0.339]	0.349	0.352
Chlorobenzene	ug/m3	0.092 U	0.092 U [0.092 U]	ND	0.092 U
Chloroform	ug/m3	1.18	0.629 [0.663]	0.913	0.0976 U
cis-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U [0.0792 U]	ND	0.0792 U
Ethylbenzene	ug/m3	0.317	0.295 [0.304]	0.308	0.087
Isopropylbenzene	ug/m3	2.46 U	2.46 U [2.46 U]	ND	2.46 U
Methylene Chloride	ug/m3	1.74 U	1.74 U [1.74 U]	ND	1.74 U
Methyl tert-butyl ether	ug/m3	0.072 UJ	0.072 UJ [0.072 UJ]	ND	0.072 UJ
Naphthalene	ug/m3	0.183 UJ	0.262 UJ [0.131 UJ]	ND	0.262 U
Tetrachloroethene	ug/m3	1.9	1.96 [2.09]	1.96	0.136 U
Toluene	ug/m3	3.1	2.96 [2.97]	3.03	0.561
trans-1,2-Dichloroethene	ug/m3	0.0792 U	0.0792 U [0.0792 U]	ND	0.0792 U
trans-1,3-Dichloropropene	ug/m3	0.0907 UJ	0.0907 UJ [0.0907 UJ]	ND	0.0907 UJ
Trichloroethene	ug/m3	0.107 U	0.107 U [0.107 U]	ND	0.107 U
Vinyl Chloride	ug/m3	0.0511 U	0.0511 U [0.0511 U]	ND	0.0511 U
Xylenes (total)	ug/m3	0.698	0.681 [0.672]	0.687	0.26 U

Notes:

ug/m3 - Micrograms per cubic meter

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit

J - The value given is estimated

IA - Indoor air sample

OA - Ambient air sample

ND - Not detected

Table 2. Residential Sub-slab Soil Vapor Data

South Unit

Sample Name: Location: Date Collected:	Units	SS-4 Sub-Slab 4/22/2011	SS-5 Sub-Slab 4/22/2011	Average Detected Concentration Sub Slab Soil Vapor
1,1,1-Trichloroethane	ug/m3	0.109 U [0.109 U]	0.109 U	ND
1,1,2-Trichloroethane	ug/m3	0.109 U [0.109 U]	0.109 U	ND
1,1-Dichloroethane	ug/m3	0.0809 U [0.0809 U]	0.0809 U	ND
1,1-Dichloroethene	ug/m3	0.0792 U [0.0792 U]	0.0792 U	ND
1,2,4-Trimethylbenzene	ug/m3	0.0982 U [0.0982 U]	0.0982 U	ND
1,2-Dibromoethane	ug/m3	0.154 U [0.154 U]	0.154 U	ND
1,2-Dichloroethane	ug/m3	0.0809 U [0.0809 U]	0.0809 U	ND
1,2-Dichloropropane	ug/m3	0.0924 U [0.0924 U]	0.0924 U	ND
1,3-Butadiene	ug/m3	0.0442 U [0.0442 U]	0.0442 U	ND
1,3-Dichlorobenzene	ug/m3	0.12 U [0.12 U]	0.12 U	ND
1,4-Dichlorobenzene	ug/m3	0.12 U [0.12 U]	0.12 U	ND
Benzene	ug/m3	0.223 U [0.223 U]	0.223 U	ND
Bromodichloromethane	ug/m3	0.134 U [0.134 U]	0.134 U	ND
Bromoform	ug/m3	0.206 U [0.206 U]	0.206 U	ND
Carbon Tetrachloride	ug/m3	0.17 [0.163]	0.327	0.247
Chlorobenzene	ug/m3	0.092 U [0.092 U]	0.092 U	ND
Chloroform	ug/m3	0.122 [0.112]	0.18	0.149
cis-1,2-Dichloroethene	ug/m3	0.0792 U [0.0792 U]	0.0792 U	ND
Ethylbenzene	ug/m3	0.0868 U [0.0868 U]	0.0868 U	ND
Isopropylbenzene	ug/m3	2.46 U [2.46 U]	2.46 U	ND
Methylene Chloride	ug/m3	1.74 U [1.74 U]	1.74 U	ND
Methyl tert-butyl ether	ug/m3	0.072 UJ [0.072 UJ]	0.072 UJ	ND
Naphthalene	ug/m3	0.262 U [0.262 U]	0.262 U	ND
Tetrachloroethene	ug/m3	12 [11.3]	0.352	6.00
Toluene	ug/m3	0.188 U [0.233]	0.188 U	0.233
trans-1,2-Dichloroethene	ug/m3	0.0792 U [0.0792 U]	0.0792 U	ND
trans-1,3-Dichloropropene	ug/m3	0.0907 UJ [0.0907 UJ]	0.0907 UJ	ND
Trichloroethene	ug/m3	0.107 U [0.107 U]	0.107 U	ND
Vinyl Chloride	ug/m3	0.0511 U [0.0511 U]	0.0511 U	ND
Xylenes (total)	ug/m3	0.26 U [0.26 U]	0.26 U	ND

Notes:

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit

ug/m3 - Micrograms per cubic meter

SS - Sub-slab soil vapor sample

ND - Not detected